



POWERED SmartIRt/c SERIES DATASHEET

SmartIRt/c HIGHLIGHTS

- Smart air purge assures maintenance free long term accuracy
- Smart continuous auto calibration
- All digital system
- Smart housing resists mechanical and thermal shocks
- Smart emissivity shift and ambient radiation correction
- Easy plug and play installation
- Lowest cost air purged, linearized sensor on the market
- Optics from 3:1 to 40:1 available
- Outputs of 0-5V, 0-10V, 4-20mA, & RS232
- Temperature ranges from 32 - 1832 °F (0 - 1000 °C)
- LOW impedance, results in no offset errors due to leakage current in your input device
- Custom scaling and programming for low emissivity materials and low temperatures available



SmartIRt/c.3 (3:1 FOV) & SmartIRt/c.5 (5:1 FOV)

3.71" x 1.37" x 0.76" (94.3 x 34.9 x 19.4 mm)



SmartIRt/c.20 (20:1 FOV) & SmartIRt/c.40 (40:1 FOV)

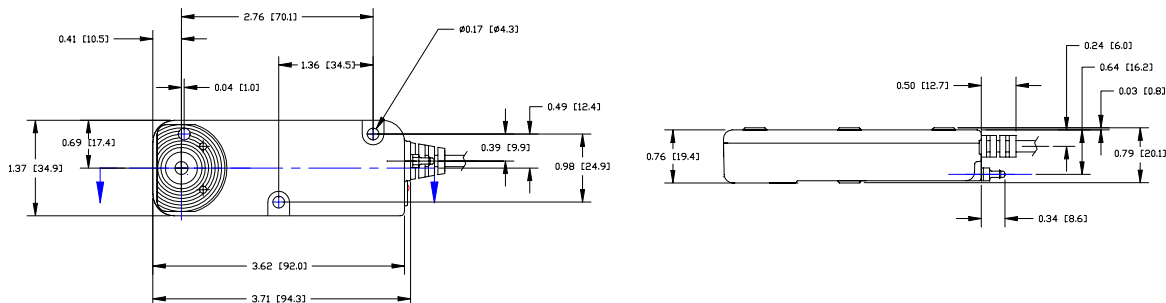
SmartIRt/c.20: 3.71" x 1.37" x 0.76" (94.3 x 34.9 x 19.4 mm) & 1.63" (41.3 mm) x 0.75" diameter snout

SmartIRt/c.40: 3.71" x 1.37" x 0.76" (94.3 x 34.9 x 19.4 mm) & 2.19" (55.6 mm) x 0.75" diameter snout

MEASUREMENT SPECIFICATIONS

	Temperature Range	Accuracy	Repeatability	Interchangeability
SmartIRt/c.3	-30-70 °C, 0-100 °C & 0-250 °C	±1 °C (2 °F) or 1%	± 1 BIT -30-70 °C = ± 0.1 °C 0-100 °C = ± 0.1 °C 0-250 °C = ± 0.25 °C 0-500 °C = ± 0.5 °C 0-1000 °C = ± 1 °C	±1 °C (2 °F) or 0.5%
	0-500 °C	± 2 °C (4 °F) or ± 2%		± 2 °C (4 °F) or ± 1.5%
SmartIRt/c.5	-30-70 °C, 0-100 °C & 0-250 °C & 0-500 °C	± 2 °C (4 °F) or ± 2%		±1 °C (2 °F) or 0.5%
	0-1000 °C	± 2 °C (4 °F) or ± 2%		± 2 °C (4 °F) or ± 1.5%
SmartIRt/c.20	-30-70 °C, 0-100 °C & 0-250 °C & 0-500 °C	± 2 °C (4 °F) or ± 2%		±1 °C (2 °F) or 0.5%
	0-1000 °C	± 2 °C (4 °F) or ± 2%		± 2 °C (4 °F) or ± 1.5%
SmartIRt/c.40	-30-70 °C, 0-100 °C & 0-250 °C & 0-500 °C	± 2 °C (4 °F) or ± 2%		±1 °C (2 °F) or 0.5%
	0-1000 °C	± 2 °C (4 °F) or ± 2%		± 2 °C (4 °F) or ± 1.5%

OUTLINE DRAWING



EXERGEN Corporation ♦ Watertown, MA 02472 USA ♦ 617-923-9900 (F) 617-923-9911
www.exergen.com/industrl for the NEWEST information on all products, technotes and press releases.

ELECTRICAL SPECIFICATIONS

	SmartIRt/c.3	SmartIRt/c.5	SmartIRt/c.20	SmartIRt/c.40
LINEAR TEMPERATURE RANGES <small>(custom scaling also available upon request)</small>	-30-70 °C (-22-158 °F) 0-100 °C (32-212 °F) 0-250 °C (32- 482 °F) 0-500 °C (32- 932 °F)			
OUTPUT	0-5V, 0-10V*, 4-20mA (50 ohm max, 250 & 500 ohm available upon request), RS232*			
UPDATE TIME	Approximately 250 msec.			
FIRST READING UPON POWER UP	Approximately 2 seconds			
EMISSIVITY SETTING	0.90 (custom low emissivity settings available for metals, etc. upon request)			
SPECTRAL RESPONSE	5.5 to 20 microns (other ranges available for specific applications, thin films, etc.)			
POWER	12 or 24 VDC (10%). Shuts off when voltage is functionally low.			
OUTPUT IMPEDANCE	750 ohms on 0-5V and 0-10V models			
MINIMUM LOAD IMPEDANCE	100 K ohms			
MAXIMUM LOOP IMPEDANCE	50 ohm max (250 and 500 ohm max available upon request)			
POWER CONSUMPTION	< 800 mW at 24 VDC and < 600 mW at 12VDC			

MECHANICAL SPECIFICATIONS

	SmartIRt/c.3	SmartIRt/c.5	SmartIRt/c.20	SmartIRt/c.40
MINIMUM SPOT SIZE	0.12" (3.0 mm)	0.12" (3.0 mm)	0.625" (15.9 mm)	0.625" (15.9 mm)
AMBIENT TEMPERATURE RANGE	0 to 70 °C (32 to 158 °F)			
STORAGE TEMPERATURE RANGE	-10 to 70 °C (14 to 158 °F)			
CONSTRUCTION	Heavy Duty Alloy Casting			
WEIGHT	Approximately 8 oz. (227 g)			
RELATIVE HUMIDITY	95% non condensing			
AIR PURGE	Integral built in air purge with small sized aperture and heat exchanged which minimizes drift for superb accuracy			
CABLE	3 ft (0.9 m) of 5 conductor, tinned copper, twisted pair, polypropylene, insulated with shielded wire			
RATINGS	NEMA , IP54 (with air on)			

ORDERING INFORMATION

SmartIRt/c-F-P-O-T

F	FIELD OF VIEW	P	POWER	O	OUTPUT	T	TEMPERATURE RANGE
.3	3:1	12V	12 VDC	05	0-5V	70C	-30-70C
.5	5:1	24V	24 VDC	010	0-10V	100C	0-100C
.20	20:1			420	4-20 mA	250C	0-250C
.40	40:1			232	RS232	500C	0-500C
						1000C	0-1000C

OPTION: Add Ta to any part # to add ambient temperature option to output ambient temperature

***NOTE:** 0-10V only available in 24VDC and RS232 only available in 12VDC

Example: SmartIRt/c.3-24V-420-250C (with 4-20mA output measuring target temperature from 0-250C) or

SmartIRt/c.3-24V-420-250C-Ta (with 4-20mA outputting target temperature and ambient temperature from 0-250C)

P/N: 818598